

Part one: Multiple Choice: In the following questions Choose the best answer: [20 Marks]

1. What does BIOS provide for the computer?
 - a. BIOS provide the physical interface for various devices such as USB and FireWire ports.
 - b. BIOS provide memory space for applications to load into/ from the hard drive.
 - ✓ ☒ c. BIOS provide the I/O space that enables the CPU to communicate with other hardware.
 - d. BIOS provide memory space for applications to load into / from the main system RAM.
 - e. None of the above.
2. Putting the BIOS on the hardware device itself is called: *option ROM*
 - a. Flash ROM
 - b. Dynamic ROM
 - c. CMOS ROM
 - ✓ ☒ d. None of the above
3. Which of the following most accurately describes the relationship between BIOS and hardware?
 - a. Only hardware that attaches to the motherboard via ribbon cables needs BIOS.
 - b. Only hardware built into the motherboard needs BIOS.
 - c. Some hardware devices need BIOS.
 - ✓ ☒ d. None of the above.
 - e. Most hardware needs BIOS.*all hardware needs BIOS*
4. In modern motherboards the system BIOS supports all the hardware that never changes is stored in
 - a. CMOS
 - ✓ ☒ b. ROM
 - c. Flash ROM
 - d. None of the above
5. Programs stored on ROM chips or Flash is called
 - a. Software
 - b. Hardware
 - ✓ ☒ c. BIOS ✓
 - ✗ ☒ d. None of the above
6. Parity error messages are a sign of _____.
 - ✓ ☒ a. Damaged port connectors.
 - b. Faulty RAM.
 - c. A bad CMOS battery.
 - d. Missing cache memory.
7. After Pentium III/ Athlon era:
 - a. Most motherboards had separate keyboard controller chips.
 - b. Most motherboards had keyboard controller chips integrated in Northbridge.
 - ✓ ☒ c. Most motherboards had keyboard controller chips integrated in Southbridge.
 - d. None of the above.

8. Flash ROM that differs from traditional ROM:

- ☒ a. Can be updated and change the contents through a very specific process
- b. Can store more data
- c. Slower than traditional
- d. None of the above

9. Programs stored on ROM chips—Flash or any other kind of ROM chip—are known collectively as:

- a. Hardware
- b. Software
- ☒ c. Firmware
- ☐ d. None of the above

10. The chipset provides

- a. An extension of the address bus to the expansion slots, and thus to any expansion cards in those slots.
- b. An extension of the data bus to the expansion slots, and thus to any expansion cards in those slots.
- ☒ c. An extension of the address bus and data bus to the expansion slots, and thus to any expansion cards in those slots.
- d. None of the above

11. Which of the following features are ISA LIMITATIONS?

- ☒ a. Slow
- b- Automatically configured
- c- 32 bit wide
- d- None of the above

12. PCI stands for:

- a- Peripheral Computer Interconnect
- ☒ b. Peripheral Component Interconnect
- c- Peripheral Communication Interconnect
- d- None of the above.

13. Which of the following features the PCI has:

- a- Manually configured
- ☒ b- 32 or 64 bit wide
- c- 7 MHz speed
- None of the above

14- AGP is:

- a- specialized, video only version of ISA
- b- specialized, video only version of VL-Bus
- ☒ c. specialized, video only version of PCI
- d- None of the above.

15- All hard drives made today employ:

- a. Stepper motor
- ☒ b. linear motor to move the actuator arms
- c. DC motors
- d. None of the above

16- Each group of tracks of the same diameter is called:

- a. a sector
- ☒ b. a cylinder
- c. Geometry
- d. None of the above

17- Which ATA standards added one new feature called (S.M.A.R.T.)

- a- ATA-2
- ☒ b- ATA-3
- c- ATA-7
- d- None of the above

18- 504 Mbyte limit come from the fact that:

- a- A drive could have no more than 1,024 cylinders, 26 heads, and 63 sectors/track
- b- A drive could have no more than 512 cylinders, 16 heads, and 63 sectors/track
- ☒ c- A drive could have no more than 1,024 cylinders, 16 heads, and 63 sectors/track
- d- None of the above

19- Current hard drives use an

- ☒ a- Extremely advanced method of RLL called *Partial Response Maximum Likelihood (PRML)* encoding.
- b- Run length limited encoding.
- c- Flux reversal encoding
- d- None of the above.

20- LBA uses:

- ☒ a- Sector translation
- b- INT 31
- c- ATAPI
- d- None of the above

Part Two: In the following questions put [T] opposite to the true Sentence and [F] opposite to the false Sentence, and correct the false sentence: [10 Marks]

1. New devices must have their system resources configured. Configuration happens more or less automatically now through the auto detect process. **F** *Add/Remove Hardware wizard*
2. An AGP slot is a PCI slot, but one with a direct connection to the Southbridge. **T**

3. The ISA bus enabled manufacturers to jump the first of the three hurdles for successful expansion cards, namely communications. ~~F~~ physical connections
4. The logical geometry described what the hard drive told the OS. ~~F~~ CMOS
5. Windows stores device drivers in the CMOS. ~~F~~ hard drive
6. BIOS provide memory space for applications to load into from the hard drive. ~~F~~ CMOS 0.5
7. If you plug an ATA3 drive into an older controller it will work—just not in ATA3 mode. ~~F~~ not work
8. The first expansion bus was faster than the 8088 CPU. ~~F~~ 3MHz slower
9. BIOS supports all the hardware that might change from time to time. ~~F~~ system BIOS 0.5
10. Booting sequence is can help technician when hard disk crash or infected by virus. ~~T~~ System BIOS

Part Three: Fill in the blanks, in the following questions: [10 Marks]

1. The “blue X” symbol is the most common error symbol and usually the easiest to fix. 7
2. The process of accessing memory without using the CPU is called DMA.
3. When the PC first came out, every device had to have its system resources and CHS manually configured. 0.5
4. POST program is stored in system ROM. +1
5. The physical geometry defined the real layout of the CHS inside the hard drive.
6. ATA-2 added an extension to the ATA specification, called ATAPI that enabled non-hard drive devices such as CD ROM drives and tape backups to connect to the PC via the ATA controllers.
7. ATA-2 added support for a second controller, raising the total number of supported drives from two to four.
8. In 504 Mbyte hard disk standard limit, we have 1024 cylinders × 16 heads × 63 sectors/track × 512 bytes/sector = 504 MB

Part Four: What are the following stands for: [10 Marks]

1. IOAPIC stands for: *Input output advances programmable interrupt controllers.*
2. S.M.A.R.T stands for: *Self monitoring analysis and report technology*
3. BIOS: *Basic input output system*
4. VESA: *video enhanced standard architecture*
5. MCA: *Micro channel architecture*
6. ATAPI: *advance technology attachment Packet interface*
7. LBA: *logical block address*
8. AGP: *Accelerated Graphic Port*
9. ISA: *Industry Standard architecture*
10. PIO: *programming input output*

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